

ABSTRACT OF THE DISCLOSURE

The invention uses a layer 2 switch (L2 switch), or bridge, to separate user's message traffic by use of Virtual Local Area Networks (VLANs) defined within the switch. Three new types of ports are defined, "promiscuous" ports "isolated" ports, and "community" ports. Three types of VLANs internal to the switch are defined, "primary" VLANs, "isolated" VLANs and "community" VLANs. The promiscuous ports are connected to layer 3 or layer 4 devices. Isolated ports and community ports are connected to individual user's servers, etc., and maintain traffic for each user separate from other users. The primary VLAN connects to all promiscuous ports, to all isolated ports, and to all community ports. The primary VLAN is a one way connection from promiscuous ports to isolated or community ports. An isolated VLAN connects to all promiscuous ports and to all isolated ports. The isolated VLAN is a one way connection from an isolated port to the promiscuous ports. A community VLAN is defined as connecting to a group of community ports, and also connecting to all of the promiscuous ports. The group of community ports is referred to as a "community" of community ports. A community VLAN is a one way connection from a community of ports to the promiscuous ports, but allows a packet received by one community port to be transmitted out of the switch, through the other community ports connected to that community VLAN.